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The Wild Flowers of Early August.

THE early part of August is, perhaps, the least favorable time in all the verdurous months for those who like to decorate their rooms with wild flowers. Yet its resources are not to be despised, while an intelligent use of them will produce more beautiful results than the average careless gatherer can imagine. Of course, these resources vary according to climate and elevation—the seashore, the low riverland, and the mountain each furnishing its own peculiar supply. Let us see what flowers are furnished by the beautiful hill regions to the westward of New York, and how they may best be employed.

Here and there a head of Golden-rod or a slim spray of Aster may antedate the plenteous harvests to follow, but they should be picked unwillingly, for a wise decorator knows that these plants must be her chief dependence during many future weeks, and that even the most appreciative eye grows tired of too long a sequence of the same colors and forms. Variety is Nature's great resource for keeping us ever content, ever freshly delighted with her outdoor effects—variety in her stretches and touches of bright color as contrasted with the permanent green background which never fatigues the sense. And Nature's example will be imitated within doors by those among her children who really love her, for they understand that she is the best of all artistic teachers.

Thus we are brought to a fundamental fact as regards indoor decoration. Green should be chiefly relied upon when adornments on a large scale are attempted. Branches, shoots and sprays of foliage, different tints of green being selected so that absolute monotony is avoided, should be used for the corners of the hall, the landings of the staircase and that dark hollow of the unused fireplace which throws a large low jar and its verdant burden into such fine relief. Used quite by themselves, if they are large of leaf and stately in design, or relieved by one or two bold touches of color, these great bouquets of foliage are quieter and more restful in effect, usually more harmonious with the furnishings of the room, and more refreshing to the eye than any bright bunches of strong colors. This is true even at seasons which offer us floral color in the most varied and delicate tones and most beautiful shapes. But in the first part of August, when really lovely flowers are less plentiful, a still greater reliance should be placed upon them, while small and delicate arrangements of simple green—as of little Pine and Hemlock shoots, Ferns and Grasses—are not outrivaled by any blossoms even for the adornment of the dinner-table.

Set upright against plain stretches of wall the level sprays of the Beech exceed all others in beauty, but bolder bits of Hemlock, glistening Tupelo-shoots, Hazel-boughs loaded with their green nuts, and sprays of Maple may be well employed, and, indeed, any sprays or shoots which bear their leaves, not in close clusters, but more or less individually displayed. If an enlivening touch of color is wanted early August gives it in those reddened tips of Maple, Dogwood, or Tupelo, which, while they predict the autumn, do not really show its most vivid tints or its dry and fragile textures.

At this time the most beautiful flowers of midsummer have departed. The red and yellow Lilies, the Spiræas and the Meadow Rue have followed the Laurel into their annual graves, and the late-blooming, white-flowered shrubs stand clothed in plain green again, even the Nine-bark and the New Jersey Tea. But at least one white-flowered shrub is just coming into bloom—the Clethra. It is not as graceful as most of its forerunners, and therefore is less easy to arrange within doors. Yet, if it is not massed too closely, and is intermixed with much green spray, beautiful large bouquets can be made with it, while its spicy perfume will embalm the house.

Very different is the Sumach, now showing at its best its solid flower-cones, of a lovely pale green, or the richest red. This also should not be massed, as one most often sees it, in huge formless bunches. It should be carefully displayed so that its fine fronds of foliage define themselves to the eye, while each fruit-cluster is brought out distinctly against the background they form. With no other boldly decorative plant is a warning against overabundant use more needful.

It is the same with the Thistles. Their beauty is not alone in their handsome heads. It is also in their architectural foliage and their dignity of port. Two or three standing in a very tall, narrow vase appear to much better advantage than a larger array, or than one or two combined with other plants. Neither of the yellow Gerardias—the branched form or the stiff "strict" form—can be made to look quite as well in the house as it does rising from the Fern-carpeted ground of the forest edge. Yet, separated from all other flowers, not too closely crowded, and relieved by an intermixture of green spray, either sort may produce a fine effect. The Pearly Everlasting, with its light gray-green foliage, loses its charm if it is associated with plants of a stronger color, and is apt to injure theirs. But if a bouquet formed of this plant alone is placed in a vase which does not "kill" its delicate hues, preferably in one of clear white glass, it is very individual and lovely. It is like a bouquet grown and gathered and seen by moonlight, knowing nothing of the heat and vigor of the sun.

Among the Desmodiums of the hour there is one of exceptionally delicate beauty. This is D. acuminatum, with large three-foliate leaves, and rising far above them, a long and very slender stalk bearing a loose panicle of little pea-shaped blossoms of the loveliest rosy hue. Growing on the border of the woods, a cluster of these Desmodiums looks like a swarm of tiny bright pink butterflies poised at some distance from the leafy level below them. It is impossible to imitate this effect within doors, for a wide green background is needed, as well as a green mat below. The best way to employ these flowers is to discard all foliage and group a number of the flower-stalks together in a narrow-mouthed slender jar. Then they produce quite a different effect, but a delightful one, recalling certain stiff yet delicate floral traceries characteristic of Japanese art.

With the small-blossomed Sunflowers, which are now

abundant, the case is reversed. They are ragged and ungraceful in habit, and therefore look best when used to supply sparks of yellow to large bouquets of foliage. But the Spikenard, again, is attractive because of the way it bears itself, and the combination of its handsome leaves with its large panicles of minute greenish flowers. Two or three branches of this should be set by themselves and given room to spread widely as they do in growth.

Very different, again, are the arrangements which may be made in low basin-like vessels with green twining or climbing plants—Virginia Creeper and Bittersweet, for example—enlivened by slenderer lengths of the Virgin's Bower. This now bears its crop of starry white blossoms, predicting the thick clusters of long-fringed fruit which will mingle so effectively with the red and yellow foliage of a later month.

But the most abundant flowers of the early part of August are those which even their admirers consent to call weeds, and which often grow in an undeniably weedy fashion. We do not refer to the Jewel-weed, which is now in season. It is by no means weedy in habit, but it is useless to the decorator, as it quickly droops when picked. We mean the Milkweeds, the Thoroughworts, the Evening Primroses, the tall Fireweed (Epilobium), the ubiquitous Carrot and the other white-flowered Umbelliferæ which plentifully keep it company.

Most beautiful of these, as regards its flowers, is the despised Carrot. Weedy, indeed, is its habit, and very weedy the aspect it bestows upon the fields and roadsides which it overruns. But, closely examined, no flower in the world is more exquisite, and indoors it should be used so that its delicate countenance, not its thin, sprawling habit, is emphasized. It may be mingled, not too profusely, in a large bowl with Ferns and sprays of White Pine, so that its heads scarcely surpass the ends of their leaves. Thus displayed it is a fitting decoration for the dining-table of a princess; and also when its heads are plucked from their stems and floated close together in a flat dish—a mat of fairy lace surrounded by a border of Ferns or of Elder-leaves. The Milkweeds are hard to manage, for they are both coarse in leaf and "floppy" in port. Perhaps they look best when only a short piece of the stem is preserved and they are placed in a low flat dish, so that their soft pleasant colors and the beautiful structure of their small flowers may be observed.

As for the Thoroughworts, white and purple, they are not attractive when closely examined, but in color and in carriage they are charming. Tall arrangements of them, white and purple grouped together, may well be set in the darker corners of the house; and, for once, great quantity will not injure the quality of the effect, provided they are massed, not with their heads all on a level, but with some rising well above the others, so that their graceful dignity shall not be concealed. The yellow of Golden-rod harmonizes well with the dull purple of the Joe Pye Weed. So a few sprays of the autumnal flower may be indulged in, for, added to an arrangement of white and purple Thoroughworts, it will make a bouquet of bright yet soft color suitable to any spot, not too fully illumined, in almost any room. If the hand at work is skillful, a few Carrots or other umbelliferous plants may be added, and, perhaps, one or two small Sunflowers. Simple arrangements are safer as a rule, and this means, of course, combinations of only one or two kinds of flowers. But complex arrangements need not be altogether shunned; and it is good practice in interior decoration to gather a pile of varied Thoroughworts, of white Umbelliferæ, of Golden-rods, Asters and slim Sunflowers, and see how a couple of great vases may be filled with them, so that the general effect shall be harmonious in color and outline, while the special character of each head or spray shall be effectively brought out.

Four years ago (see vol. vi., page 301) we gave an account of the Algonquin National Park of Ontario, and spoke with some enthusiasm of the foresight of the people of the Dominion in setting apart for public use an area of 1,300 square miles of land and 166 square miles of water. The site itself is from 1,300 to 1,400 feet above the sea-level, and there is no place in the province where so many important streams take their rise. It is a place of singular beauty, comprising a great variety of woodland and water scenery, with primeval forests, elevated lakes and streams which flow under overarching trees. Noble game, fur-bearing animals and many kinds of birds make their home here, so that as a game preserve, as a forest reservation where experiments in systematic forestry can be carried on, as a remnant of the original sylvan scenery of the country which is rapidly being desolated, as a health resort with its pure air and resinous odors, this park was a worthy conception of wise and public-spirited people, and seemed to mark an important advance in the development of Ontario.

Some letters lately published in *Forest and Stream*, of this city, make us apprehensive that the reservation is not actually administered on the lines of its original conception. It seems that much of the Pine timber is being cut, and the landscape is mutilated and defaced in a hundred ways. A delightful little lake is described which was a bit of natural loveliness, wooded to the brink with old Pines. Around it were little bays where Water Lilies grew and where deer came to eat the buds. Now the Pine is cut away, the beautiful island in the lake hardly shows a bit of verdure, a big sawmill is going up at the mouth of the river, with dams, lumber depots here and there, steamboats on the lakes, and projected railroads, so that as a breeding-ground for game much of the park is already useless. This certainly seems like desecration, and when it is added to this that many of the streams have been dammed up so as to kill the timber on their banks by drowning out the tree roots and leaving the lakes surrounded by a fringe of death, we may agree with the correspondent that Algonquin Park will soon be like "a beautiful face seared with a red-hot iron." Of course, we have no means of verifying the facts of the case, but we sincerely trust that the men of the Dominion will remember that the making of a few hundred dollars now is a small matter when so much beauty and so much genuine utility is destroyed for all time to come.

Rosa setigera.

We have frequently called attention to the beauty and value of the Prairie Rose as a garden plant. It has been known for a century, although gardeners are only just learning its value, and, curiously enough, no good figure of it has been published until this week, when we print on page 323 the reproduction of a drawing of flowering and fruiting branches made by Mr. Faxon in the Arnold Arboretum.

Rosa setigera has been described so often that it is unnecessary to do more than to refer again to its many good qualities, its hardiness and rapid growth, its freedom from the attacks of the insects which disfigure so many Roses, and the charm of its lovely pink flowers which open about the middle of July, when the flowering time of most Roses is passed.

Rosa setigera may be trained to a pillar after the fashion usually adopted for the cultivation of its better-known offsprings, the Baltimore Belle and Queen of the Prairie, but to our taste it looks the best when allowed to grow naturally, and to send out without restriction its long arching shoots, which sometimes attain the length of twelve or fifteen feet during the season, and in their second year produce many short erect lateral branches, which bear the crowded flower-clusters toward their extremities. Planted in rich soil, with a dozen feet separating it from its nearest neighbor, the Prairie Rose will grace any garden, and if several hundred plants could be used together in one great mass to cover some broad slope or steep bank in a large park, an effect of surprising beauty would be obtained;

and if in such a mass the plants were set from twelve to twenty feet apart with the ground between them carpeted with the long prostrate stems of Rosa Wichuraiana, which produces its fragrant white flowers when the Prairie Rose is blooming, a harmonious composition might be obtained.

Single plants of such flowering shrubs as Rosa setigera dotted here and there through mixed shrubberies, although in themselves beautiful, often make a plantation spotty and fail to produce the effects which might be obtained by masses of a single shrub or of two or three shrubs harmonious in form and color. The promiscuous mixing up of shrubs and trees of many countries ill-sorted in form and in the color of foliage and flower, is a common fault in most American park-planting, the result in part of a superabundance of material and in part of a want of self-restraint on the part of the planter which manifests itself in a desire to make as much show as possible without much regard for the harmony of the result. An experiment which we have suggested before of massing shrubs of the same kind together in the different parts of a large park or park system, instead of planting everywhere first a Rose, then a white-flowered Spiræa, then a Forsythia, and so on, is certainly worth a trial. Tending to secure breadth, simplicity and unity, it would at least do away with the eternal monotony of American park-planting and produce at different seasons color-effects which only the Japanese have known how to make truly effective.

Notes on the Cultivated Brassicas.

IN common with nearly all cultivated plants, especially those which are perplexing, the Brassicas have received too little attention from botanists. The inevitable outcome of such neglect or of any superficial study is a reduction of species, and in this direction Brassica has suffered greatly. It is usually confusing to reduce types. The most perplexing species in our manuals are those which contain the greatest number of old types or synonymous names. It is true that this is supposed to be primarily due to the variation of the species or groups, but I am convinced that it is often to be charged to superficial study or insufficient material. The conviction is growing upon me that our manuals contain too few rather than too many species; at all events, the miscellaneous dumping of Ruta-bagas, Turnips, Rape and other plants into Brassica campestris is unnatural, and therefore unfortunate. The best presentation of the species of true Brassicas which has yet been made is that of De Candolle's Prodromus so long ago as 1824, and my own studies lead me to adopt essentially those conclusions. I am not clear as to the generic merits of Brassica and Sinapis. If we are to erect generic characters upon general habit, the two might be kept apart, but I have not found structural characters with which to separate them, and for the purposes of this discussion I have kept them together. I should add that I am acquainted with no group in which many of the difficulties of classification vanish more quickly upon a study of the growing plants than in these Brascas. From my standpoint the group may be divided as follows:

A. Whole plant glaucous-blue when in flower; leaves of the flower-stems clasping; flowers various.

I. Leaves from the first more or less fleshy throughout and glaucous-blue, even when young; flowers large and creamy yellow, the petals conspicuously long-clawed and the sepals usually erect.

1. Brassica oleracea, Linn., the Cabbage and Cauliflower tribe. Leaves smooth from the first, and the root never tuberous.
2. B. Napus, Linn., the Rape. Leaves smooth from the first; differing from B. oleracea chiefly in habit and more deeply scalloped leaves. The botanical position of the Rapes is open to doubt.
3. B. campestris, Linn., the Ruta-baga. First leaves hairy, the root usually tuberous.

II. Leaves (except upon the flower-stem) thin and green; flowers smaller and bright yellow, less prominently clawed.

a. Plant potentially biennial (that is, the root hard and thickened, often distinctly tuberous); foliage firm in texture.

* Leaves distinctly hairy.

4. B. Rapa, Linn., the common Turnip. Leaves prominently lyrate or interrupted below, the root tuberous.

** Leaves not hairy.

5. B. Chinensis, Linn., the Pak-Choi Cabbage. Radical leaves wavy and ample, glossy green, obovate or round, obovate in general outline, either entire or obscurely wavy or even crenate, tapering to a distinct and thick strong petiole, which is generally not prominently margined; pod large and tapering into a beak half an inch long; root sometimes tuberous.
6. B. napiformis, Bailey (*Bull. 67, Cornell*, 1894), the tuberous-rooted Chinese Mustard. Radical leaves comparatively few, the blade thin and oval in outline, and on long and slender slightly feathered petioles, sharply and irregularly toothed with a thin bloom; beak of the pod more abrupt; root distinctly hard and tuberous.

aa. Plant truly annual; foliage profuse, loose and soft.

7. B. Pe-Tsai, Bailey, l. c., the Pe-Tsai Cabbage. Numerous radical leaves, large and light green, oblong or ovate-oblong, crinkled and very veiny, and the margins wavy, contracted into a flat and ribbed petiole one to three inches wide, which is provided with a wide thin notched or wavy wing; stem leaves sessile and clasping; pod of medium size, with a short cone-like beak; the leaves tend to form an oblong, loose head, like Cos lettuce.
8. B. Japonica, Sieb., the California Pepper Grass, Pot-herb Mustard. Rather numerous radical leaves, oblong or oblong-obovate, the margins either crisped or cut into many very fine divisions, the petiole distinct at its lower end; stem leaves all petioled; pod very small, with a slender beak; the soft, thin leaves make excellent "greens."

B. Plant green or but slightly glaucous when in flower; leaves on the flower-stems not prominently clasping; flowers small and yellow. (Essentially Sinapis.)

9. B. juncea, Cosson, the Chinese Mustard.
10. B. nigra, Koch, common mustard of commerce.
11. B. alba, Boissier, white mustard.

The most important innovations in this classification are the recognition of the peculiarities of the stem-leaves and the sizes and colors of the flowers; and it is to be noticed that the Ruta-baga and Turnip, which are ordinarily thrown together, fall into different categories. The differences between the cabbage-like species and turnip-like species in size and color of flowers is really striking when the plants are flowered side by side. The Turnip-flower is more like that of Mustard than like that of the Cabbage tribes. The breaking up of the Oriental Cabbage tribe into the three species (B. Chinensis proper, B. napiformis and B. Pe-Tsai) is also an innovation, but I am unable to understand the plants in any other arrangement.

The point which I wish to urge particularly at this time is the specific distinctness of the Ruta-baga and Turnip, and I will contrast them more minutely. The tubers of the two are different in season, texture and flavor. In the Ruta-baga the small leaves immediately following the seed-leaves are sparsely hairy, but all subsequent leaves are entirely smooth, densely glaucous-blue, thick and cabbage-like, with a fleshy petiole and midrib. In the Turnip the radical leaves are always more or less hairy. and they are green and radish-like, thin, with slender petiole, and the leaves are much more lyrate, with interrupted leaflets on the petiole; the small leaves following the seed-leaves are also thinner and narrower and more deeply scalloped. In the Ruta-baga the flowers are large, creamy and cabbage-like, while in the Turnip they are small, yellow and mustard-like, with shorter claws and more spreading calyx. The Turnips vary in hairiness, but the cone of expanding leaves, or the "heart-leaves," always shows the hairs distinctly, while the heart-leaves of the Ruta-bagas are entirely smooth, fleshy, and remind one of the young shoots of Sea-kale. I have grown most of the trade varieties of Ruta-bagas and Turnips, and they may be referred to their respective species as follows. Specimens are in the Cornell herbarium.

RUTA-BAGAS (Brassica campestris).—1, Bronze-top Swede; 2, Burpee's Breadstone; 3, Carter's Ruta-baga; Carter's Imperial Hardy Swede; 5, Colson's West Norfolk; 6, Early White Vienna; 7, Improved American Purple-top Ruta-baga; 8, Improved Champion; 9, Improved Yellow Summer Turnip; 10, Improved Yellow Swedish; 11, Laing's Improved; 12, Lincolnshire Improved; 13, Long Island Improved Purple; 14, Long White French Turnip; 15, Shamrock; 16, Skirving's; 17, Sutton's Champion; 18, Taunton; 19, White Ruta-baga; 20, White Swede or Russian; 21, Yellow French.

TURNIPS (Brassica Rapa).—1, Aberdeen; 2, Black Stone; 3, Cow-horn; 4, Early Dutch Turnip; 5, Early Snowball; 6, Extra Early Milan Red-top Strap-leaf; 7, Extra Early Purple-top

Munich; 8, German Teltow; 9, Green Barrel; 10, Green Globe; 11, Grey Stone; 12, Long White Tankard; 13. Montmagny; 14, New Golden Finland; 15, Pomeranian White Globe; 16, Purple-top Strap-leaf; 17, Purple-top White Globe; 18, Red-top Globe-shaped; 19, Red-top Strap-leaf; 20, Robson's Golden Ball; 21, Seven-top; 22, Teltow, or Small Berlin; 23, True Jersey Navet; 24, White Egg; 25, White Flat, or Globe; 26, White Model; 27, White Norfolk; 28, White Strap-leaf; 29, Yellow Aberdeen; 30, Yellow Globe; 31, Yellow Malta; 32, Yellow Stone.

Brassica oleracea must be held to include, I think, all the Cabbages, Kales or Borecoles, Collards, Brussels Sprouts, and Cauliflower and Broccoli; and most botanists appear to agree that the Kohl-rabi belongs here, but upon this point I am not fully satisfied. So far as I know, B. oleracea is the most variable species in cultivation in temperate climates, although Naudin would give this distinction to Cucurbita Pepo. But the Brassica varies immensely in nearly all its parts, while the important variations of the Cucurbitæ are confined to the fruit and length of vine. There are few plants in which contemporary evolution can be so well studied as in this Brassica.

The Chinese Cabbages, which are now coming into cultivation, possess unusual interest to both the horticulturist and botanist. They are not only exceedingly variable, but the variations are of such a character as to show very clearly what has been the genetic history of the garden forms. The species is now represented in cultivation by several widely different forms. Hemsley refers the Chinese Cabbages to Brassica campestris, but they really have little in common with that much-abused species.

The confusion into which our Brassicas have fallen is in some measure due to the different vernacular names which they bear in different countries. The French use the word chou generically to include all forms of B. oleracea, and the Ruta-baga—that is, all the blue thick-leaved Brassicas—while in England the Ruta-baga is called the Swedish Turnip. A tabular view of the different vernaculars may prove to be useful:

French.	English.	American.
Chou Cabus,	Cabbage,	Cabbage.
Chou de Milan,	Savoy,	Savoy Cabbage.
Choux à Grossescotes,	Portugal Cabbage,	Portugal Cabbage.
Chou de Bruxelles,	Brussels Sprouts,	Brussels Sprouts.
Choux-verts,	Borecole or Kale,	Borecole or Kale.
Chou-rave,	Turnip Cabbage or Kohl-rabi,	Kohl-rabi.
Chou-navet,	Turnip-rooted Cabbage or Swedish Turnip,	Ruta-baga.
Chou-fleur,	Cauliflower,	Cauliflower.
Navet (or Chou-navet),	Turnip,	Turnip.

Cornell University. *L. H. Bailey.*

Plant Notes.

Populus alba Bolleana.—It is with extreme regret that I see this handsome variety of Populus alba failing year by year on our grounds. At one time it was thought that it would be an exceedingly valuable shade-tree for street-planting purposes in the northern towns of Ontario. A number of trees were planted on our grounds here eight years ago. They grew with great rapidity for five or six years, and were very striking and, I may say, beautiful, when suitably situated. Out of about a dozen specimens on the grounds there is not a single healthy one to-day. The causes which have brought about this sudden decline are (1) severe winter cold without snow protection, (2) borers, (3) fungous diseases. It is difficult to say which factor has caused most injury to the trees. I am inclined to think that the order I have placed them in is probably correct. It is true that borers are exceedingly active in their attacks upon Bollé's Poplar—much more so than upon P. alba—and their presence seems to have a more directly injurious effect. Low temperatures cause the bark to split, branches to die off, and a general debility. Trees on sandy loam or loam and clay exhibit little differences in behavior.

Central Experimental Farm, Ottawa, Canada. *John Craig.*

Crocosmia aurea Imperialis.—This plant has an interesting history, the variety having been evolved by selection from the type some ten years since by Herr Leichtlin. About the same time a similar variety was flowered at Kew from some corms received from south Africa. Apparently nature and Herr Leichtlin had been working on the same lines. The production is certainly a most distinct and beautiful form of Crocosmia aurea, being double the size of the type in flower. These have wide segments, are about three inches across and a tawny reddish orange color, the reverse and buds being much brighter in hue. It is much the handsomest and largest of any of the attractive family of Tritonias and hybrid Montbretias. Whether it is hardy or not I do not know. The Montbretias only have been tried here, but have never survived in the open. It is possible and probable that they would do so if protected from wet, as are other Cape bulbs.

Elizabeth, N. J. *J. N. Gerard.*

Foreign Correspondence.

London Letter.

NEW plants were less numerous than usual at the last meeting of the Royal Horticultural Society. Orchid fanciers were specially interested in a new bigeneric hybrid of Veitchian origin, namely, Epilælia radico-purpurata, the result of crossing Epidendrum radicans with Lælia purpurata, the former being the mother parent. The habit and leaf characters of the hybrid resemble the Epidendrum, the influence of the Lælia being evident only in the flowers, of which there were two, borne on the apex of a slender terminal scape. Each flower measured nearly three inches across, and the segments were rotate, the petals ovate, wider than the sepals, the lip pandurate and flat; the color was a light russet with a zone of magenta surrounding a patch of bright yellow on the lip. The plant is of greater interest to the botanist than the cultivator. Messrs. F. Sander & Co. exhibited Angræcum Eichleri in flower. It has an elongated or creeping stem bearing two rows of ovate leaves, while the flower is not unlike that of A. virens. The same firm exhibited a beautiful variety of Vanda Hookeriana under the name of superba, and a plant bearing one enormous flower of the rare Masdevallia Gargantua. Messrs. Low & Co. sent a plant of their new Bulbophyllum Claptonense, which is a near ally, if not only a form of B. (Sarcopodium Lobbii).

Sedum maximum purpureum, shown by T. Ware & Son, is an extraordinary plant, exactly like the type, but wholly of a dark chocolate-purple color, almost the color of the purple beet. Although it did not obtain a certificate it is a plant that will find favor for bedding purposes. Rosa rugosa atropurpurea is a seedling which originated in the nursery of Mr. G. Paul. It is distinct in the small size and crinkliness of its leaves and in the rich velvety crimson color of its flowers. A hybrid Clematis, said to be from Viticella and Integrifolia, also from Mr. Paul, although not brilliant, is likely to find favor on account of its shrubby habit and terminal clusters of purplish pink nodding flowers two inches across. Heliopsis Pitcheriana received an award of merit and was much admired, the rich orange-yellow of its flowers and their substance being exceptional. A pure white-flowered Gladiolus of the Gandavensis group, and named White Lady, also won favor. It is among Gladioli what the White Watsonia is among Watsonias. Messrs. Sander & Co. exhibited an imposing group of this plant, the flower-spikes being over five feet high, copiously branched and crowded with lovely snow-white flowers. They also sent fine examples of Lilium Henryi and Exacum macranthum.

Hibiscus Syriacus cœlestis, with flowers of a rich mauve-blue, and a blotched one called Painted Lily were awarded certificates, the blue form being greatly admired. Veronica la Seduisante, one of the speciosum section, is a beautiful variety with large erect spikes of rich purple flowers. Eucryphia pinnatifida was also well shown. This plant is of special value, in this country at any rate, from its habit of flowering late in July, a comparatively flowerless period so far as trees and shrubs are concerned. The

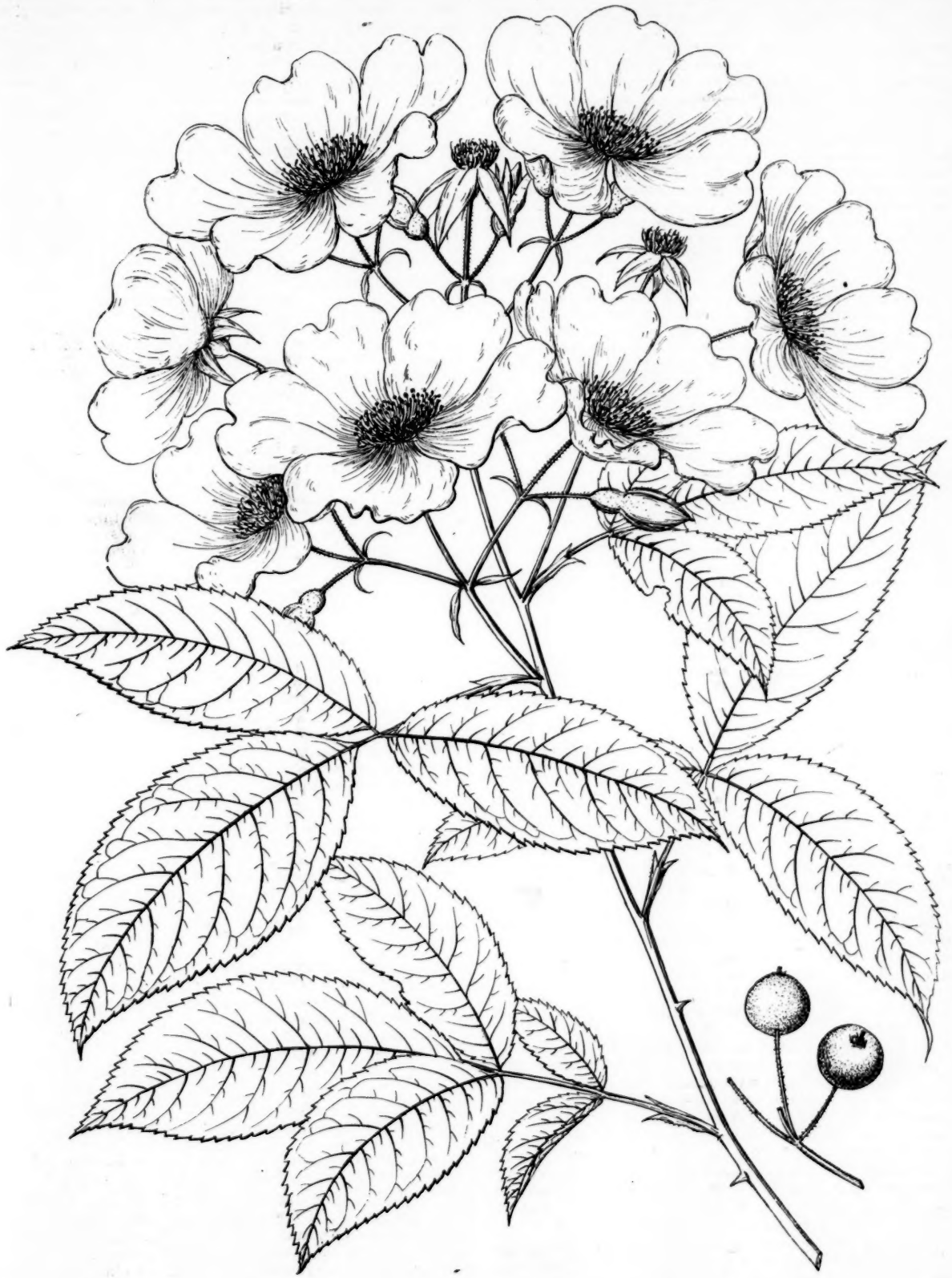

Fig. 42.—Rosa setigera.—See page 320.

Eucryphia is beautiful at Kew now. A bunch of flower-branches of the Spanish Broom, Spartium junceum, served to remind of the glory of this shrub. I lately saw some grand bushes of it at and about the railway station at Taplow, near Windsor. Indeed, the display made by this plant there is a startling revelation to any one seeing it for the first time. Taplow is the nearest railway station to Dropmore, of conifer fame.

New Tea Roses were shown by Messrs. W. Paul & Son, the best of them, to my taste, being a rich crimson well-formed flower named Francis Dubrieul, two equally striking pinks named Madame A. Chatenay and Grand Duc de Luxemburg, and a fine white named Empress Alexandra. The lovely G. Nabonnand received an award of merit. Godetia gloriosa, shown by Dobbie & Co., is a new variety in the way of Lady Godiva, but colored rich crimson, in effect like Crimson Rambler Rose. Sweet Pea Pink Cupid was shown by Atlee, Burpee & Co., Philadelphia.

Cacti.—We have now a National Cactus Society, composed of cultivators of Cactaceous plants, who are more numerous in England than formerly. The society's annual exhibition was held this week at Westminster, and, although the muster of plants was not large, it was most creditable, the collections generally showing good cultivation. Cacti will stand rough treatment better than most plants, but not without showing it, and careful cultivators who appreciate Cacti keep them well groomed, so that none of their attractions are sacrificed. The difference between a carefully grown plant and a roughly used one of such as Pilocereus senilis, Echinocactus Grussoni, E. Wislizeni, etc., is most marked. Phyllocacti, under the careful cultivation of Messrs. J. Veitch & Sons, are very much superior as garden plants to what one usually sees. I call attention to this matter because collectors and packers of these plants in the United States, the source of most of them, appear to be careless of bruising them. I have seen collections of them arrive in England in a most deplorable state from this cause. The Secretary of the National Cactus Society is Mr. C. A. Blogg, Brighton Road, Croydon. Messrs. Cannell & Sons are the only nurserymen who stock a collection of Cacti here.

Crinum Woodrowi, Baker.—This new species has lately flowered at Kew, whither it was sent a few months ago by Mr. Woodrow, of Poona, Bombay. It has a large ovate, smooth-skinned, brown bulb, without any distinct neck, and broad glaucous leaves not unlike those of Crinum giganteum, and a stout scape two feet high bearing an umbel of about a dozen flowers, which have an erect slender greenish tube four inches long and narrow oblanceolate, pure white segments, elegantly recurved, and of the same length as the tube. The stamens are about half as long as the segments. The bulbs were sent for C. brachynema, which is peculiar to the Bombay Presidency, but which is distinct from the new one in its narrower leaves and smaller flowers, and differs from all other Crinums in having stamens no longer than the tube—that is, the flowers are thrum-eyed. It is a handsome garden Crinum. A figure of it will shortly appear in *The Botanical Magazine.*

Kew Hand-lists.—A list of all the tender Monocotyledons cultivated at Kew is the most recent publication emanating from the Royal Gardens. It includes all except Orchideæ, of which a separate list was published last year, and consequently large groups of plants of more or less garden interest are enumerated; that is, Seitamineæ (Gingerworts, Musas, etc.); Bromeliaceæ, of which Kew possesses over 250 species; Liliaceæ, Amaryllideæ and Irideæ, among which are many of those plants popularly known as Cape bulbs, Aloes, Agaves, etc.; Palmæ, no less than 400 species of this order being in cultivation at Kew; Aroideæ, which are nearly as well represented as the Palms; Pandanads and Bamboos. So far as cultivated plants are concerned, these Kew Hand-lists are more trustworthy in regard to nomenclature than the *Kew Index*, the latter great work being an index to the names that have been given to plants rather than a critical revision of them, whereas the names used in these lists are in almost all cases those which Kew has decided to adopt. It is intended to eventually accomplish a complete enumeration of all the plants cultivated at Kew, and this means practically all plants that are capable of cultivation in England both out-of-doors and under glass.

London. *W. Watson.*

Cultural Department.

The Vegetable Garden.

THIS summer is characterized by a great deal of sunless weather, and the rainfall has been several inches above the average. Artificial watering has been unnecessary throughout the season, and the frequent and copious drenchings of the ground and the luxuriant growth of the plants have made it difficult to keep the weeds in check. Hoeing and cultivating of the wet soil has not been possible, and a good deal of hand weeding has been necessary to keep the vegetable-beds clean. When any hoeing is done all weeds should be raked off the same day and wheeled away to the rubbish pile. Some kinds are hard to kill, as Purslane and Chickweed.

Most vegetables have done well this season, excepting Sweet Corn and Tomatoes. The former has been later than usual in maturing and lacks flavor, and high winds and rains broke down the stalks about the middle of July. Tomatoes thus far have ripened slowly and cracked badly, and those lying on the ground have a poor chance to color at all. The plants trained on trellises or poles need to be looked over once a week and to have surplus laterals and decaying foliage cut away and any leaves which keep the sunlight from reaching the fruit. Good sorts tried this year for the first time are New Imperial, Honor Bright and Autocrat. Plants for family purposes to fruit from November onward are now quite stocky in four-inch pots. At present we grow in the open air, and will do so until the middle of September. A pinch of seed sown now will give ripe fruit early in January.

All members of the Brassica family are doing finely this season, and no better weather could be wished for them. Late plantings of Savoy Cabbage and Curled Borecole are still seasonable, and both will give nice heads for cutting. Cauliflowers are benefited by a soaking of guano or cow-manure water after a heavy rainfall; the ground should be stirred whenever it dries out sufficiently. Squashes are doing specially well. If the ground is heavy and retentive of moisture it is a good plan to lay a piece of slate or a shingle under the fruit; this may also be done with Melons, which are now setting and swelling an extra-good crop, but need some hot dry weather to ripen them and give them the proper flavor. Eggplants still need constant watching from the the attacks of potato-bugs, and they are greatly benefited by a scattering of chemical fertilizer or a soaking of strong liquid-manure. Onions will soon be sufficiently ripened to pull up and dry; the hoe is worked through them frequently, and any weeds near the bulbs are carefully picked out by hand. No vegetable better repays extra attention than Onions. To produce the finest bulbs liquid-manure is necessary, and the bulbs of plants treated with it are double the size of those not receiving any fertilizer or manure-water at all. The best bulbs are those of Prizetaker, Ailsa Craig and Cranston's Excelsior. All these are sound, good-keeping sorts.

We sow Lettuce until the end of September. Ground vacated by Onions toward the end of the month will give good heads before winter. We find Deacon, New York, Sutton's Cabbage, Salamander and Big Boston excellent varieties for late sowings. To winter in frames we still find nothing better than White Tennis Ball. A last sowing of Endive is also now seasonable; plants of earlier sowings will need tying up loosely by the tips of the cone-shaped leaves to blanch. Radishes may be sown for several weeks yet, those of the French Breakfast type being preferable. This is a good time to make a late sowing of Purple-top Munich or White Globe Turnip, as well as of Ruta-bagas. About September 1st is as early as we generally sow Prickly Spinach to stand out in winter.

Celery has reveled in the recent moist weather and is growing luxuriantly. Most of its growth will be made, however, between now and the end of September. The earliest batch is being blanched by means of boards, which is a superior method to earthing up with soil, as is done with the winter supply. Celery is a gross-feeding plant, and after heavy rainfalls a few barrels of liquid-manure water will materially improve the plants. So far we have seen no signs of leaf-rust, but this is more likely to appear when cooler nights with

heavy dews are succeeded by hot bright days. We go through the benches as soon as the ground dries sufficiently after watering and lightly stir the surface soil. It is unwise to stir it to any depth, as, owing to the moist summer, the roots are nearer to the surface than usual. This applies to many other plants as well as to Celery. Leeks enjoy similar treatment to that given to Celery, and doses of liquid-manure of good strength are now given them once a week.

Cucumbers need to have all ripe fruit removed to keep the plants in good bearing condition. Plants of the English frame section under glass take large supplies of water and frequent doses of stimulants, and require some shade, such as whitewash on the glass. Parsley, if grown to be lifted for a winter supply, should be thinned out to a foot apart, the best-curled plants being selected for the purpose.

It will soon be time to collect manure for the early Mushroom bed. Sometimes in the rush of spring and early summer work the old beds are not cleared off; wet days should be taken advantage of to do this work, and the old material is useful for mulching as well as for mixing with loam for bedding plants, or for lightening up heavy land.

Taunton, Mass. *W. N. Craig.*

Some Hardy Perennial Plants.

THE genus Echinops, or Globe Thistle, is not a very large one, but it contains a few species that are worthy of a place in our gardens. They are perfectly hardy and grow and thrive in any good garden soil, but for the best effects they ought to be massed near some bright yellow flowers, such as the early Sunflowers, when their globular heads show to better advantage. One of the species in bloom now is E. commutatus, often found under the name exaltatus. It is a vigorous-growing plant, and reaches to a height of five or six feet or more. The stems terminate with large, round whitish flower-heads, which are quite conspicuous, and are well clothed with large pinnatifid thistle-like leaves, downy beneath and rough with hairs on the upper side, and margined with small sharp spines.

Bees are especially fond of the flowers of this plant, and it would seem to be a useful plant for those who have an apiary. Probably the best species in blossom now is Echinops Ritro. This desirable plant is an old-time inhabitant of gardens and is a native of the south of Europe. It never attains much more than three feet in height. The intense blue round flower-heads are always attractive and noticeable. The leaves are also pinnatifid and downy beneath. The neat compact habit of this attractive species makes it a desirable border plant. Another species of desirable habit is E. sphærocephalus; it grows from three to four feet high and has pale blue flower-heads. The Globe Thistles produce seeds abundantly, and young stock is easily obtained from seed, or the plants can be readily increased by division.

The Sea Hollies, or Eryngiums, are umbelliferous plants and are remarkably distinct from any other plants in bloom now. Some are quite hardy and are especially attractive and handsome for the beautiful blue of the stems and leaves. E. amethystinum, as it is grown here, is slightly over two feet in height, and bears amethyst-colored flowers in globose heads abundantly. In an open, sunny position it makes a handsome border plant. Another vigorous species, and which grows slightly taller, is E. giganteum. It is much-branched and the blue flower-heads are ovate in shape. Other equally handsome species now in bloom are E. dichotomum, E. Bourgati and E. campestre.

Podophyllum Emodi, a desirable hardy herbaceous plant from the Himalayas, is comparatively rare in cultivation. This interesting plant belongs to the Barberry family. When in bloom it is quite ornamental, but attracts most attention when its large ellipsoid scarlet fruits are ripening. I exhibited a few weeks ago some fruits, with the leaves and stems attached, at a Saturday exhibition of the Massachusetts Horticultural Society, and a first-class certificate of merit was awarded. The plant is quite hardy here and grows in slightly moist and shaded positions. The plant from which the fruits were taken was raised from seed four years ago. The herbaceous stem is about a foot in height, has two orbicular leaves which measure six to nine inches across and have from three to five lobes. The cup-shaped white flowers are solitary, axillary, or slightly raised above the axils, nodding, and measure slightly more than one inch in length. *Nicholson's Dictionary of Gardening*, *Robinson's English Flower Garden*, Hooker and Thomson's *Flora Indica* all give the measurement of the fruit as from one to two inches long. The fruits on our plant measure three and a half inches in length and slightly more than six in circumference. Hooker and Thomson in their *Flora Indica* state that Podophyllum Emodi is a remarkable plant and one of the earliest spring flowers in the Himalayas, and that the pulpy, tasteless fruits are edible.

Harvard Botanic Garden, Cambridge, Mass. *Robert Cameron.*

Seasonable Suggestions.

ALL bulbous plants that have been at rest during the early summer should now be looked over, as it is time to pot most of them. We are now putting all the stock of Freesias into pots and pans. They will soon begin to make roots if potted, and they never can be in flower too early. It requires early potting and good culture to get Freesias in bloom by Christmas. It is almost impossible to have the soil too rich for these bulbs, and to have really good flowers liberal supplies of liquid-food is necessary after they have begun to grow. We prefer to grow them in pots or deep pans, as they are available then for house decoration. But the best plan, where cut flowers only are required, is to put the bulbs in boxes, and when the shoots are well up to place short twigs of birch between them to keep them erect. We box all small bulbs to grow on to flowering size when it is needed to add to the stock of this fine winter-flowering bulb.

Lachenalias need potting at this time also. They come from the same country, south Africa, and have been at rest for the last three months in the pots in which they grew. It will be found on examination that there are signs of root-action starting, and the sooner the bulbs are put in new soil and given moisture the better will be the results. There seems to be a growing liking for Lachenalias, and there are some fine varieties now in commerce, the result of crossing the various species. If it is desired to purchase Lachenalias, it is wise to order early. The Dutch growers last year could not supply many of the kinds, the demand being larger than the supply, especially of the larger-flowered varieties of recent origin. We find that L. pendula makes a fine companion plant for the Roman Hyacinth; it flowers at the same time of year, and adds variety to the prevailing white of the Hyacinths. Lachenalias can be grown in the coolest of houses; they are averse to heat in every case, and a shelf in a Violet-house, where they can be free from frost and have plenty of air, are conditions they delight in. Lachenalias make the best display when potted in five-inch pots. We have had them in pans, but to see them and use them to the best advantage pots are preferable, filled with rich soil. When planted they should be placed in a cool frame until frost comes, when they may be removed to the greenhouse.

To have Roman Hyacinths early we must plant early; in fact, as soon as it is possible to obtain the bulbs. The largest bulbs do not always produce the most flowers, but, preferably, those that are hard and well matured. It is the custom with some growers to rush the crop of bulbs on the market to secure early sales at the risk of maturity. This can be easily detected in the bulb, as it is then not hard and shows signs of premature ripening off at the crown. These delicate and fragrant flowers are in demand as early as Thanksgiving-time, and the bulbs should be planted as soon as they can be obtained.

Mignonette is desirable in winter, especially as it is never seen to so good advantage as when well cultivated in a house with a suitable temperature. Our summers are much too hot to favor the growth of good spikes, and it is well to sow some seeds of an approved strain now to have it when flowers are most scarce, just when Chrysanthemums are past. Mignonette likes a cool temperature, say a maximum of fifty degrees, such as a Violet-house will furnish, and a deep soil. A bench at least a foot deep is best, and though this may seem a great deal of soil, we find it is useful in spring, when hot-beds are being made up for early vegetables, to have the soil from the old spent Mignonette beds ready to hand already warm and in condition for sowing seeds or transplanting vegetables. There are many good strains of Mignonette now, as Allen's Defiance and Sutton's Giant. We have grown the latter for a number of years and it never has disappointed us. Both these kinds seem to be fine selections from Machet, which is the best for outdoor culture.

A word may be said for Browallia speciosa major, which has proved desirable for pot culture in winter. The older Browallias were small-flowered in comparison with this variety, and not very desirable garden plants, but this novelty has all the qualities that go to make a good winter-flowering plant, either for use in pots or as cut flowers. A packet of seeds sown now will make nice plants for winter use and will flower along until late spring.

South Lancaster, Mass. *E. O. Orpet.*

The Annual Species of Coreopsis.

COREOPSIS is a genus of common American plants, of which no less than seventeen species are found widely distributed through the Mississippi Valley and the southern states. Plants of this genus are thrifty, vigorous growers, generally hardy, and when cultivated do not demand the care required by many delicate species. This genus does not appear to have received much attention from American gardeners, and our seedsmen have heretofore offered few named varieties, but in Europe, where the plant is not indigenous, it is deservedly popular and many varieties have been bred and offered.

The larger number of the species are annuals, but some are biennials or perennials. In this northern climate the seed should be sown under glass in March, the young plants potted off when about an inch high and planted out in May. They begin to flower in June, and continue to bloom profusely till frost-time.

The annuals are collectively known, in distinction from the perennials, as Calliopsis. Among these the best known are Coreopsis tinctoria, C. cardaminefolia, C. coronata and C. Drummondii. The last two are low-growing species, bearing the flowers on long pedicels above the rather thick foliage. They do not make as good an effect in massing as some others.

Probably the most widely cultivated species is Coreopsis tinctoria. This is a pretty, slender-growing plant, much branched, and with very narrow linear leaves. The type has yellow rays with a purple-brown blotch at the base, but there are numerous variations, in some of which the entire flower is purple-brown. Coreopsis is better adapted for massing than for planting singly. C. tinctoria makes a good background for an herbaceous border. Some of the dwarf varieties, differing from the type, are erect and shapely and bear their flowers in a close mass. These make a pretty border for a bed. Variety may be added by proper selection of colors. C. tinctoria, cut with long stems, makes a pretty bouquet for a mantelpiece or large dining-table. I have seen a pleasing effect obtained by cutting the stems long and placing them in a loose bouquet in a large vase. They fall over the sides of the dish and readily suggest both the lack of compactness which characterizes the growing plant and its natural gracefulness and delicacy.

University of Vermont. *V. A. Clark.*

Correspondence.

The Vitality of Seeds.

To the Editor of Garden and Forest:

Sir—Referring to Mr. Hatfield's article on the vitality of seeds, I may add to the list the graceful and showy Ipomœa coccinea. Fully as interesting are the unfavorable conditions under which seedlings will thrive. A trellis around the stump of a tree was covered last year with this Ipomœa, which, as usual, self-sowed its seed. Some fell into a diminutive crack in the top of the stump, and this year two small plants about a foot or so high are flourishing without any soil to grow in. They did not even seem to feel the need of water before the last rains set in.

A neighbor of mine picked a seed-pod of Cobæa scandens late in the fall and allowed it to ripen in the house during the winter. On planting the seeds the following spring the plants came up with variegated foliage and retained the variegation throughout the season. The ripening of the seeds in the house rather than on the vine caused, perhaps, a certain diseased condition of both seed and plant.

Bergen Point, N. J. *L. C. L. Jordan.*

Range of Pacific Coast Lilies.

To the Editor of Garden and Forest:

Sir,—Since writing the series of articles on Pacific coast Lilies, which have appeared in Garden and Forest, some interesting facts regarding their distribution have come to my notice. The range of Lilium pardalinum extends to Julian, in San Diego County, California, well toward the Lower California line. This gives this species a distribution from Lower California to British Columbia and to Lake Winnipeg, truly an immense range.

Hitherto I have only known Lilium Washingtonianum as existing in the Sierra Nevada and Cascade ranges. I now have definite knowledge that where the Rogue and Klamath rivers break through the Sierra chain, L. Washingtonianum follows them to the sea. They are common in the Siskiyou range. L. Washingtonianum follows the Trinity, the great southern tributary of the Klamath, and I have at hand specimens of it collected only thirty miles from Eureka, in Humboldt County, California. At this point L. Washingtonianum makes a wonderful growth, being rarely less than seven feet high, and the flowers are pink. Some stalks were fourteen feet high.

Lilium rubescens, its near relative, is found at points not over fifteen miles south, and I think that I can safely say that I have determined the northernmost extension of the one and the farthest southerly extension in the Coast Range of the other.

Ukiah, Calif. *Carl Purdy.*

The Sycamore Blight.

To the Editor of Garden and Forest:

Sir,—Observing Mr. Olmsted's request in Garden and Forest of July 21st concerning the blight of the Plane-tree, I report from this vicinity that the native Platanus occidentalis suffered badly. Many appeared in June quite dead, but some are now thrusting out new sprouts which may or may not mature. I know of but eight trees of P. orientalis about here. Four of them are vigorous trees. These four did not suffer at all. The other four are weak trees, and did suffer some in June, but less than the natives did, and have now substantially recovered.

When Platanus orientalis is to be planted I think a small vigorous tree should be selected, good ground chosen and kept heavily top-dressed for several years. Trees treated in this way flourish for a dozen years at least. What they do later is beyond my experience.

New Bedford, Mass. *Thomas M. Stetson.*

The Elm-leaf Beetle.

To the Editor of Garden and Forest:

Sir,—I have occasionally read in your journal of machinery for spraying trees on a large scale as a remedy against insects and fungi. Would you advise a borough to purchase a machine or to employ some one to undertake the spraying of the trees by contract? If you advise the purchase of a machine, what particular pattern would you recommend, what is its probable cost, and where could it be obtained?

Morristown, N. J. *S.*

[These questions cannot be answered categorically without some further knowledge as to what our correspondent proposes to accomplish. The best advice we can give him is to get the *Year Book of the Department of Agriculture* for 1896 and study the article by Dr. L. O. Howard on The Use of Steam Apparatus for Spraying. There is no doubt that a steam engine can be made useful for the protection of shade-trees, and that it is the most economical way to treat a large number of trees, and the letter which follows this reply gives an account of one fairly successful experiment in this direction. A very excellent apparatus is now used in the public parks of this city, which was constructed under the supervision of Mr. E. B. Southwick, the entomologist of the department. Some such apparatus ought to be at the command of every city and town which takes any interest in its shade-trees. Dr. Howard's article goes into the details of the subject, gives the history of many attempts which have already been made in this direction, with the reasons for their failure when they have failed, and it is full of suggestions which cannot but be useful to any one who takes any serious practical interest in the matter.—Ed.]

Our Street Trees and the Elm-leaf Beetle.

To the Editor of Garden and Forest:

Sir,—The question of preserving our street trees from insect devastation is becoming quite a serious one in some of our cities, especially where the Elm-leaf beetle is most active. Spraying the large trees is rather expensive, and more or less difficult, but can be readily done if steam power is employed, as has been demonstrated in several cities. Most city governments are poor, however, and many persons seem to believe that in some way or other the trees will take care of themselves, or that the beetles will be kept in check by means of natural enemies without man's assistance. It is only when trees actually die from the effects of attack by the beetles, and such object-lessons as may be found in Milford, Norwalk and

New Haven come to the notice of the people, that remedial action is taken.

During the spring of 1896 the city authorities of New Haven made an appropriation for spraying the Elm-trees. The work was placed in charge of Mr. T. B. Kelly, Superintendent of Parks, who prepared an outfit for the purpose and used a four-wheeled road-engine connected with hose to an ordinary street-sprinkler. The machine worked well, and many of the large and beautiful Elms of the city were sprayed, not only once, but two and three times. The work began early in May, and a great many cankerworms, which are so destructive here, were killed. The park and street trees in the central part of the city were first treated; then the trees along the streets extending radially from the centre, as much ground as possible being covered before a second application was necessary. The people residing in the sprayed district were generally willing and eager to coöperate, and did so by treating or having treated, at their expense, the trees on their own grounds, and often the street trees in front of their residences. The foliage of the Elms throughout the sprayed area was fairly well preserved for the season. There were, of course, a few exceptions—some of the trees being injured by cankerworms before the poison was applied—and here and there a tree was injured by the poison itself, either from being improperly prepared, or more probably from not being kept properly agitated in the tank during the process of spraying. Many trees in the outskirts of the city, and probably more than one-half the total number of trees within the city limits, received no treatment during 1896. It is needless to say that these trees were injured, but the injury was less than that received by the same trees this season. Both the cankerworm and Elm-leaf beetle have come and gone, and the trees in the central part of the city that received thorough treatment during 1896 have retained their green leaves and are comparatively free from all insects. This personal observation is corroborated by Mr. Kelly. Outside the district sprayed in 1896, the leaves of many magnificent Elms were riddled by cankerworms in May; some were stripped of every leaf. Later, the Elm-leaf beetle attacked the remaining portion of the partially consumed leaves, soon turning the trees from green to brown. It will be interesting to note the appearance of the trees next season, to see if those sprayed in 1896 are as badly affected as the others; or, in other words, how long it will take for the region again to become badly infested where the work was done thoroughly.

It occurs to me that treating half the trees in a season, and the remainder the following year, may possibly be an effective and economical way to preserve the foliage of our street trees. I am not aware that this method has been thoroughly tested. I speak of it only because observations here during two seasons point in that direction. Of course, the spraying must be well done each year, and a little overlapping each time would help make it a more complete success. Trees along the boundary between the sprayed and unsprayed districts might need spraying every season. Even then it would be much less expensive than treating all the trees, if that were possible, and doubtless would kill the insects in far greater numbers and keep the trees in a better average condition than spraying the same trees every year, where a portion only can receive treatment. Both the cankerworm and the Elm-leaf beetle would be killed if the spraying was begun early in the season.

I would like the opinions of entomologists, through your columns, regarding the practicability of preserving the foliage of our street trees by the method of treatment which I have suggested.

Agr. Exp. Station, New Haven, Conn. *W. E. Britton.*

Recent Publications.

A Few Familiar Flowers: How to Love Them at Home or in School. By Margaret Warner Morley. Boston: Ginn & Co.

In spite of its rather sentimental subtitle, this is a book of practical value in the suggestions it makes for the proper methods of what it has become the fashion to call "nature study." It is not a book for students, but for teachers, and, we may add, for young teachers, giving them hints to make them skillful in helping children to look for themselves and think for themselves. Only five plants are spoken of—the Morning Glory or Bindweed, the Jewelweed, the Nasturtium, the Geranium and the Hyacinth—and the object is not primarily to teach children how to add some meaningless names to the different parts of a flower, but to help them discover and understand the functions and uses of the various parts of the flower and the relation of its structure to its uses. The primary purpose is "to enable the child to feel that the flower is alive, that it does things, and is an individual like the rest of us." To this end no attempt is made to accumulate a great mass of facts, but to hold the interest and stimulate the curiosity of the pupil to investigate the life-story of a plant for himself and become thoroughly acquainted with it. The adaptation of the Bindweed-flower to cross-fertilization by bees is set forth at the very outset. It is shown how the color, form and position of the flower helps the bee in its search for nectar, and how the bee helps the plant in placing the pollen where it needs to go in order to form seed.

No one can read the book without being convinced that by a study of these few plants, under the guidance of a wise instructor, a child can learn more about the essentials of plant-life than he can by pulling it to pieces and labeling its different organs. Even a young child can appreciate the vital facts in the biology of a plant, and if his investigations are properly directed he will find that in every organ and in the position and attitude of every part of the plant there is order, and that each organ has a distinct duty which it conscientiously performs in the interest of the whole organism. The study commences with the flower, but the other portions of the plant are taken up in turn, and it is shown how the root and fruit can be made quite as interesting as the flowers. The book contains a little cheap moralizing here and there which could as well be omitted, but upon the whole it is a performance of genuine merit, and we could wish that every young teacher who thinks that she (for the feminine pronoun is invariably used in this work when the teacher is alluded to) has an adequate knowledge of botany because she can give the Latin names to all the common plants which come in her way, would carefully read these simple lessons, or rather would take these five plants and study them in connection with the text of this little volume.

Notes.

The Sweet Pea, Queen Victoria, was the most admired flower on exhibition at the Springfield show. It was seen at its best in the collection of Mr. Hartzell, who exhibited the Eckford set of 1896.

Professor H. V. Wilson says that no visitor to Wilmington, North Carolina, can fail to notice what an admirable street-tree the Laurel Oak makes. Its straight trunk, symmetrical top and moderate size give it an elegance of shape well suited to city streets, and the impression of finish is heightened by the glossy aspect of the foliage.

Dr. Lintner, State Entomologist of New York, has prevailed upon the Common Council of Albany to purchase a steam sprayer for use against the Elm-tree beetle in that city. The pest has almost destroyed many beautiful trees in the parks and residential streets, so that they are naked as they are in winter. It is to be hoped that this prompt action will save many of the trees.

The Russian Apricot, Early Montgamet, is being planted to a considerable extent in central New York, where it is considered not only superior to all the Russian Apricots, but to every other variety of that fruit for planting in northern orchards, when its hardiness, productiveness and general quality are considered. Mr. S. D. Willard, of Geneva, an admirable authority, thinks that it can be grown with success wherever the Peach will thrive.

Our native Prairie Rose, which is figured on another page of this issue, and which has only recently found its way in any considerable numbers into American gardens, is beginning also in Europe to find the appreciation which its merits deserve. In the current number of *The Garden* it is stated that a large mass of this Rose in Kew was making a most effective display in the last week in July, and that, in spite of the fact that it lacks fragrance, it was there considered one of the most attractive of the hardy shrubs which flower at that season.

The autumn meeting of the American Forestry Association will be held at Nashville, Tennessee, on the 22d of September, with papers by George B. Sudworth, Colonel J. B. Killebrew, J. A. Holmes, H. A. Hazen, D. W. Baird and F. H. Newell. It

has been arranged that an excursion, including the members and their friends, shall leave Washington on Thursday, September 16th, for Asheville, North Carolina, and a visit to the forests of Mr. George W. Vanderbilt, under the direction of Dr. Schenck. The party will reach Lookout Mountain on Saturday evening and Nashville on Monday morning, September 20th.

A late number of *The Garden* contains a beautiful colored illustration of the Bicolor Daffodil, Ellen Willmott. This is one of Mr. Engleheart's creations, and it is a seedling from John Horsfield fertilized with the pollen of a selected form of Narcissus variiformis. The plant is rather dwarf, but it throws up a tall stout stem which carries a flower of remarkable substance, symmetry and color. The white lobes of the perianth slightly overlap each other and they bend forward slightly at the tips. The trumpet is of a clear yellow and of just the proper size to suit the cup. It flowers early, a little in advance of its seed parent, whose robust constitution it seems to have inherited.

The American Florist last week reproduced the photograph of a hedge of the Crimson Rambler Rose, which shows that the vigor and hardiness of this plant, together with the abundant way in which it produces its brilliant flowers, adapt it in a remarkable way to such a use. The hedge pictured is 135 feet in length and it is on the estate of D. Willis James, Esq., Madison, New Jersey. Mr. William Duckham, the gardener, set out the plants from pots where they had been grown on their own roots in May, 1896, and in June of this year, when the photograph was taken they were making a magnificent display. Shoots were tied to a wire support stretched between iron posts, and there were some fifty clusters of bloom to every linear foot.

At the annual meeting of the Vermont State Horticultural Society, Professor W. M. Munson called attention to the fact that although individuality is as strongly marked among trees of the same variety as it is among animals of the same breed, yet not one nurseryman in a hundred gives any heed to this fact when he begins to propagate. Scions are taken from the most available source, which may be a nursery row or a convenient tree of the variety needed, and with no reference to individual characteristics. Professor Munson has no doubt that this neglect in the matter of selection has more to do with the failure of orchards than any other one condition. It is one potent cause of the so-called "running out" of varieties. Breeds of horses, cattle or swine treated in a similar way would also run out very soon.

At a recent exhibition of the Royal Horticultural Society much interest was excited by a new hybrid Orchid raised by Messrs. Veitch & Sons, and called Epilælia × Radico-purpurata. As its name indicates, it is the result of crossing Epidendrum radicans upon Lælia purpurata, and although it is not the first time that such dissimilar genera have been united, it shows the striking possibilities in the way of new groups in this remarkable family. The seed of the Lælia fertilized by the Epidendrum was sown in September, 1892, and the seedling flowered in July of the present year, and the flower again, as well as the plant, shows the strong individuality of the pollen parent, as it did in the case of the hybrid between Epidendrum and Cattleya. The plant has a slender reed-like, root-bearing stem, and the flowers are borne on a slender peduncle fourteen inches long. The color is rich orange-scarlet, base and centre of the lip lemon-yellow, margined with light reddish purple. It is two inches across, with lanceolate sepals, ovate petals, broadly ovate lip and a crest with three yellow keels.

Professor M. V. Slingerland writes to *The Rural New-Yorker* that the San José scale was discovered at Cornell University last April on some of the ornamental trees and shrubs, and in May before the hibernating scales began their spring growth the bark of the trunks and larger branches were thoroughly washed with whale-oil soap, dissolved at the rate of two pounds to a gallon of water. On the 25th of June, when the scales which had wintered over had made considerable growth, every infested plant was thoroughly drenched with spray containing one part of kerosene to five parts of water. Very few of the leaves on the Dogwoods or other shrubs were injured, and a second application of the same spray was made on July 2d. The result is, the scales have been practically exterminated by three applications, but it must be understood that the spraying and washing was not done in a half-hearted way, but by a man who understands the business. This seems to indicate that the pest can be controlled by vigorous and thorough work.

Last week marked the heaviest shipments of California fruits ever sent to this city, and 105 carloads were sold. The plums now seen in great variety are of the richest colors and largest size and maintain fair prices, but California peaches, which come at this time into direct competition with the eastern product, sell at prices so low as to allow small profits, if, indeed, any to the western grower. Choice Barlett pears are still seen, and Flame Tokay and other grapes are improving in color and flavor as the season advances. Several well-known varieties of nectarines are included among these western fruits, but in the partially ripened condition in which they arrive these do not seem to appeal strongly to popular favor among more luscious and juicy fruits.

Mr. Joseph Meehan writes us that the so-called blue varieties of Picea pungens are unusually beautiful this year in Germantown. These trees vary much in color, and in a collection of seedlings many individuals will be as green as the Norway Spruce, but the silvery blue of the new growth of other individuals makes them more striking at this season than almost any conifer. Both Cedrus Deodora and C. Atlantica glauca are now covered with the silvery foliage, the Deodora Cedar seeming to make the best display, not because the foliage is of a lighter color, but because it is more abundant. The Atlantic Cedar seems to be the hardier of the two, although both succeed perfectly well in Germantown. Cephalotaxus Fortuni comes through the winter in Philadelphia as well as the Yews do, rarely suffering more than a slight browning of the foliage. C. Fortuni forms a spreading bush with foliage of the very darkest green.

According to *The Gardeners' Chronicle*, which has been making a careful summary of the prospects of the fruit crop in the British Islands, there will be a marked deficiency in the apple crop all over the kingdom. Out of 314 reports only ten are marked as over the average, while 230 are recorded as below it. Plums, the next most important crop commercially, show even a greater deficiency, from which it is clear that for both these fruits Great Britain must rely upon foreign sources of supply for the year. In regard to small fruits the case is different, and it is worth noting here that at a recent London exhibition, one firm, Messrs. James Veitch & Sons, sent a collection of one hundred varieties of gooseberries. Of course, we can grow good gooseberries and grow them well in America, but when we read of a dozen first-class varieties of red gooseberries, as many more of green berries, not to speak of yellow berries and white ones, and of a smaller class of highly flavored berries, red, yellow and green, each containing half a dozen varieties of the first merit, we understand that in the cultivation of gooseberries this country is far behind England.

The third annual meeting of the National Apple Shippers' Association was held in Buffalo, New York, on the 5th, 6th and 7th of this month, the object being to obtain accurate reports of the condition of the apple crop in various sections of the country and to regulate the system of grading and fix standards which can be definitely relied upon by dealers. In his opening address the President, E. P. Loomis, of this city, showed the growth of the apple trade, and stated that whereas in 1889 there were produced 57,242,000 barrels of apples in the United States, in 1896 the yield amounted to 75,000,000 barrels. Of 2,558,370 barrels of this fruit exported from the port of New York last year, almost all came from New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois and Missouri. The exports from Virginia are usually important, being mainly of choice Albemarle or Newtown Pippins, but last season's crop was a very light one. Mr. Loomis said that the exports of fruit, mainly apples, had grown from $24,974 in 1850 to $542,502 in 1870, and increased rapidly thereafter, until in 1894 $2,299,006 represented the value of these shipments from this city alone. The apple crop for 1897, estimated from reports of the statistician and of members of the association and from other reliable sources, is said to be considerably smaller than the immense crop of last year, but equal to the average, and the largest crops this year, as would be expected, are promised in sections which produced small crops in 1896. Colorado, California and Oregon are rated at 100 per cent. for this year, or as yielding a full crop, and some of the middle western states are rated at seventy to ninety per cent. From New York state but one-quarter of a full crop is expected, and other eastern states promise from half to two-thirds of a full yield, Virginia being counted at seventy per cent. Canada is rated at forty per cent. The grading of apples, transportation and a uniform bulge for the sides of barrels were among the subjects discussed, and with the length of staves, number of hoops and size of heads already fixed for the standard barrel, not less than sixty-four and a half inches was decided upon as the bulge.